Cancers

OVERVIEW

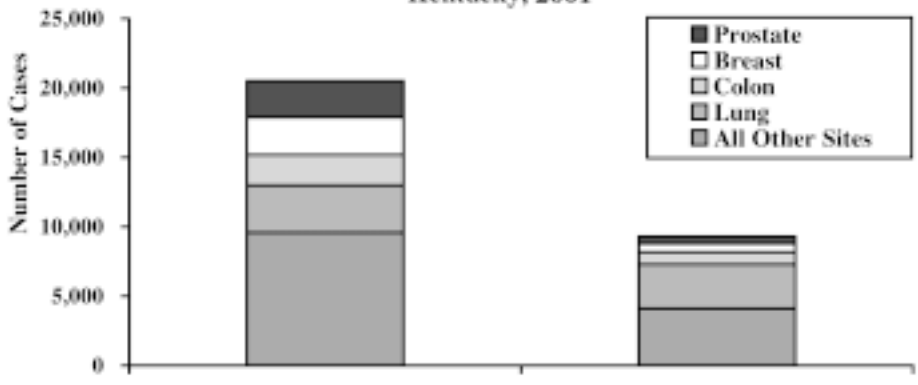
Cancer is the second leading cause of death among both men and women. It affects people of every age, race, and ethnicity, with an expected 1,268,000 new cases of cancer to be diagnosed nationally in 2001. Likewise, over 553,000 deaths are expected to occur in the U. S. due to cancer in 2001, at more than 1,500 people a day.[1] The same estimates for Kentucky include approximately 21,000 new cases of cancer for 2001 and 9,200 deaths.[2]

Four cancer sites (lung, prostate, breast, and colorectal) accounted for slightly over half of all new cancer cases among men and women and were also the leading causes of cancer deaths for every racial and ethnic group in 2000. (Fig. 1)

For nearly a century, breast, colon and reproductive cancer mortality rates among women were high and held fairly constant until improved screening and advanced treatment regimes were realized in the mid 1990s. Just as better screening and treatment were realized for the these cancers, the gain to women was offset by the surge in lung cancer mortality rates beginning in the 1970s that continued to rise well into the 90s. What were once the leading cancer killers among women are now less life-threatening, though still posing very real threats to the health and well-being of women in Kentucky. (Fig. 2)

While mortality rates are good indicators of disease patterns and trends, incidence rates enhance this knowledge by capturing the number of new cases diagnosed in any given year. Kentucky cancer incidence data is available through the Kentucky Cancer

Figure 1.
Estimated Cancer Incidence and Mortality by Site, Kentucky, 2001



SOURCE: American Cancer Society, *Cancer Facts and Figures 2001*

Figure 2.

Mortality Rate Per 100,000 Women, United States, 1930 – 1992

YEAR	Cervix/ Uterus	Breast	Ovary	Lung	Stomach	Colon/ Rectum
1930	31	25	4	2	28	22
1940	28	27	6	4	20	26
1950	22	26	7	5	13	26
1960	16	26	9	6	8	24
1970	11	27	9	11	6	20
1980	8	27	7	20	5	19
1990	6	26	7	20	5	19
1992	6	26	7	33	4	15

SOURCE: *Some Cancer Statistics.* Rich, MD, William M. (http://www.obgyn.net/women/articles/rich/stats.htm)

Registry. The Kentucky Cancer Registry began capturing cancer incidence data in the state in 1991.

Nationally, the National Institutes of Health maintains a more global registry run by the National Cancer Institute Surveillance, Epidemiology, and End Results Program – otherwise known as SEER. The SEER Program currently collects and publishes cancer incidence and survival data from 11 population-based cancer registries and three supplemental registries covering approximately 14 percent of the U.S. population. The SEER Program of the National Cancer Institute is the most authoritative source of information on cancer incidence and survival in the United States.[3]

BREAST CANCER

Breast cancer is the most common form of cancer among women in the U.S. and Kentucky, and the second leading cause of cancer deaths to women. Though breast cancer is often perceived as a young woman's disease, 4 out of 5 breast cancer deaths are among women over age 50.[4]

A report from the National Cancer Institute (NCI) estimates that about 1 in 8 women in the United States (approximately 12.8 percent) will develop breast cancer during her lifetime.[5] As a woman ages, her risk for developing breast cancer also rises. (Fig. 3)

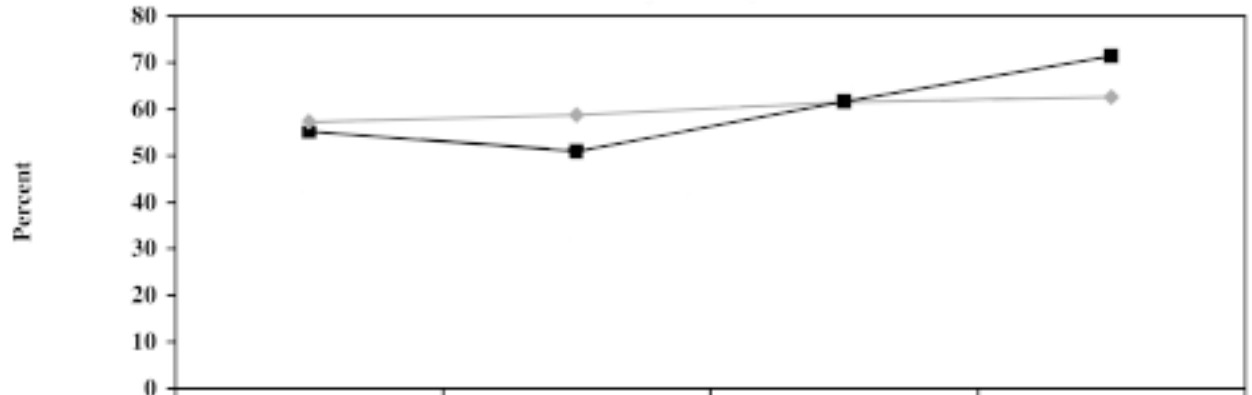
Other risks associated with breast cancer include a family history of breast cancer, having

Figure 3.
Woman's Chance of Being Diagnosed with Breast Cancer (average)

from age 30 to 40	1 out of 257
from age 40 to 50	1 out of 67
from age 50 to 60	1 out of 36
from age 60 to 70	1 out of 28
from age 70 to 80	1 out of 24
Ever	1 out of 8

SOURCE: National Cancer Institute Surveillance, Epidemiology, and End Results Program, 1995-1997

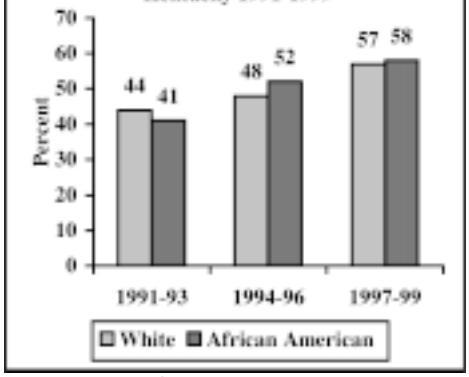
Figure 4.
Women Reporting Having Ever Had a Mammogram
Kentucky BRFSS, 1995 - 2000



	1995	1997	1999	2000
White	57.2	58.7	61.5	62.6
Black	55.1	50.9	61.6	71.3

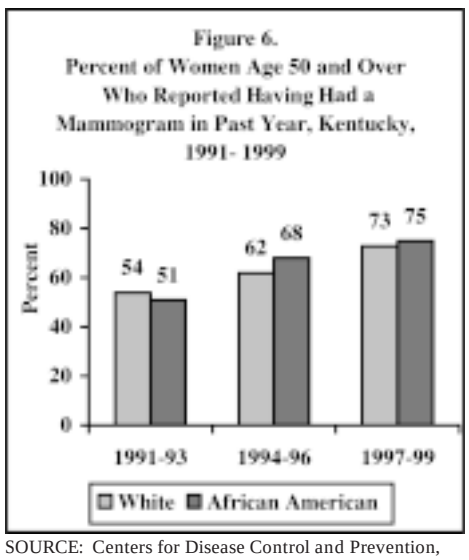
SOURCE: Centers for Disease Control and Prevention, Behavioral Risk Factor Surveillance System (BRFSS), 2000

Figure 5.
Percent of Women age 40 and Over Who Reported Having Had a Mammogram in Past Year, Kentucky 1991-1999



SOURCE: Centers for Disease Control and Prevention, Behavioral Risk Factor Surveillance System (BRFSS), 2000

Figure 6.
Percent of Women Age 50 and Over Who Reported Having Had a Mammogram in Past Year, Kentucky, 1991- 1999



SOURCE: Centers for Disease Control and Prevention, Behavioral Risk Factor Surveillance System (BRFSS), 2000

never had children or having a first child after age 30. However, despite these risks, over 70 percent of breast cancer cases occur in women who have no identifiable risk factors.[6]

As with many other chronic diseases, several lifestyle, or behavioral risk factors are associated with breast cancer. These include smoking, weight gain, obesity, fat intake, and level of physical activity. Weight gain and being overweight are commonly recognized risk factors for breast cancer, with overweight women most commonly observed to be at increased risk of postmenopausal breast cancer and at reduced risk of the much less common premenopausal breast cancer.[7] Sedentary lifestyle may also be a risk factor.

Screening

The declines in breast cancer mortality have been attributed, in large part, to the use of regular screening mammography. Mammography is a valuable early detection tool because it can identify breast abnormalities that may be cancer at an early stage, before physical symptoms develop.[8] The American Cancer Society recommends the following screening guidelines to detect breast cancer:

- Women age 40 and over should have an annual mammogram, annual clinical breast examination by a health care professional, and perform monthly breast self-examination.
- Women ages 20 – 39 should have a clinical breast examination by a health care professional every three years and should perform monthly breast self-examination.

Breast cancer screening rates in Kentucky have increased over the past several years. According to the BRFSS, rates for Kentucky women reporting having ever

had a mammogram rose from 56.9 percent in 1995 to 63.1 percent in 2000. This increase is particularly dramatic for African-American women as their rate rose from 55.1 percent in 1995 to 71.3 percent in 2000. (Fig. 4)

In Kentucky, the gap in screening rates among white and African-American women has steadily closed. For combined years 1997-99, mammography screening rates for African-American women in Kentucky exceeded those of white women. (Figs. 5 & 6) Clinical breast exam screenings remain fairly consistent for both races. (Fig. 7)

In Kentucky, local health department screening mammograms increased from 1,023 in 1991 to 17,088 in 1998 - representing a nearly 17-fold increase. This successful public health program has provided thousands of low-income and uninsured Kentucky women with access to free screening mammograms. (Fig. 8)

Signs and Symptoms

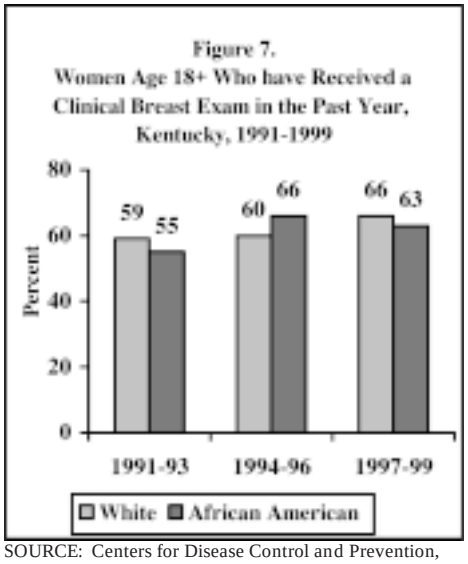
There are several signs that can indicate breast cancer. A woman who notices any of these should immediately see her doctor for an evaluation:

- Lump
- Swelling
- Skin irritation, dimpling, or thickening
- Nipple pain or sudden inversion of the nipple
- Redness, scaling, or inflammation of the breast or nipple
- Abnormal discharge

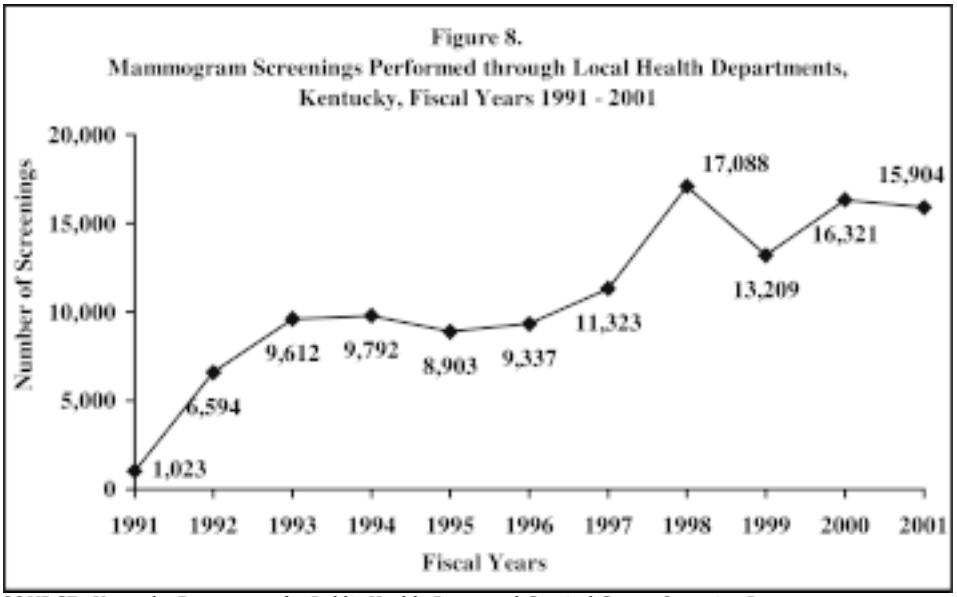
These symptoms can also be associated with benign breast conditions, so it is important not to panic if you experience these symptoms. Instead, consult a doctor for further evaluation.

Incidence and Mortality

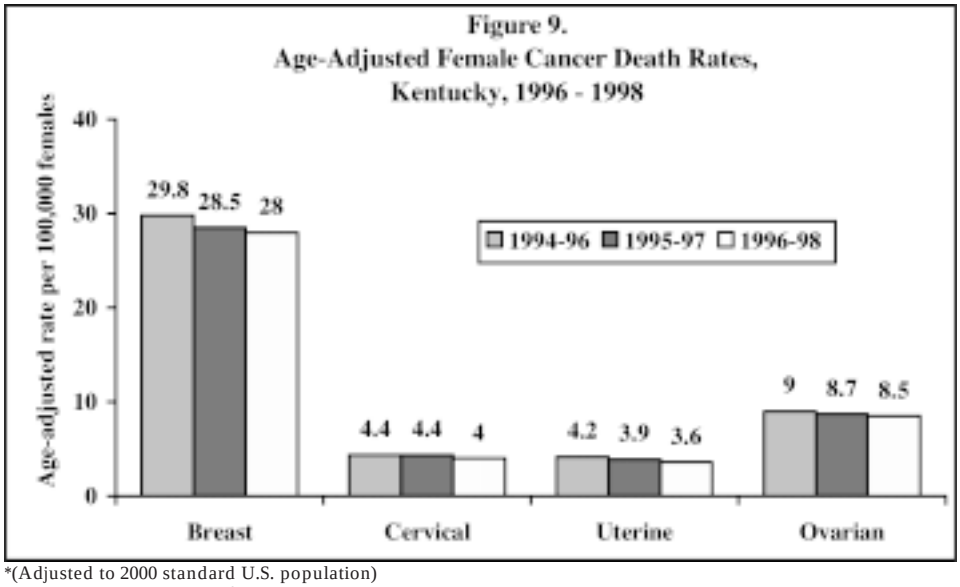
Breast cancer incidence rates have shown little change in the 1990s, while breast cancer deaths have declined about 2 percent per year since 1990 and have dropped sharply since 1995. In Kentucky in 1999, there were 614 deaths due to female breast cancer.[9] The age-adjusted rate of death due to breast cancer in Kentucky was 28 per 100,000 women, averaged from 1996-1998, versus 29.7 nationally.[10] (Fig. 9)



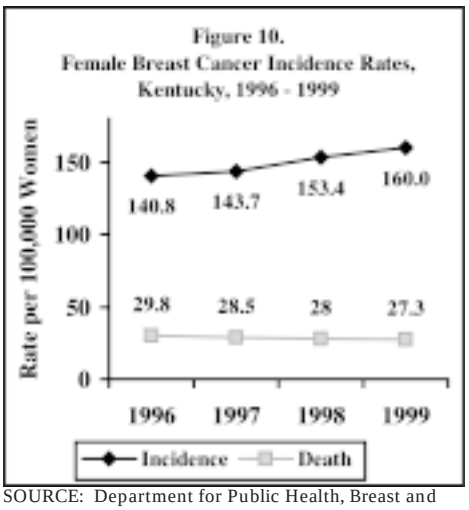
SOURCE: Centers for Disease Control and Prevention, Behavioral Risk Factor Surveillance System (BRFSS), 2000



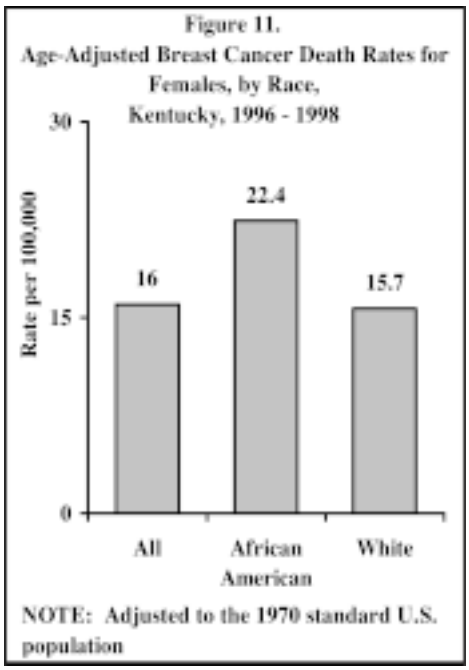
SOURCE: Kentucky Department for Public Health, Breast and Cervical Cancer Screening Program



*(Adjusted to 2000 standard U.S. population)
SOURCE: National Center for Health Statistics, 1996-98 mortality data



SOURCE: Department for Public Health, Breast and Cervical Cancer Screening Program



SOURCE: National Center for Health Statistics, Vital Statistics Cooperative Program, 1996-1998

Increased screening and earlier detection of breast cancer have resulted in better outcomes and fewer deaths. According to the Kentucky Cancer Registry, the number of new female breast cancer cases diagnosed in Kentucky has risen from a rate of 140.8 per 100,000 females in 1996 to 160 in 1999. The number of deaths decreased from 29.8 per 100,000 to 27.3 during the same period. (Fig. 10)

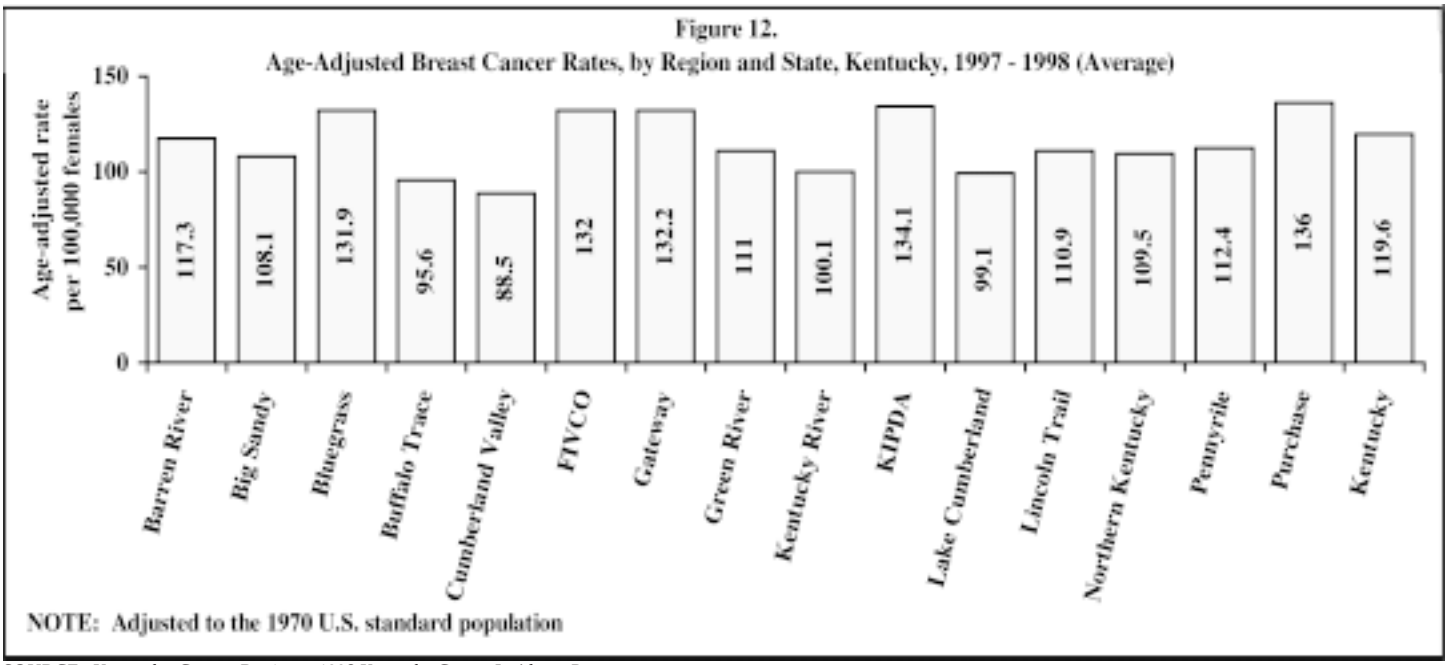
Invasive breast cancer incidence rates in Kentucky are slightly less than the SEER rate, with 104.2 per 100,000 female population (2-year average for 97-98) versus 110.7 (1996 data) respectively.

Despite the declining death rates from breast cancer, a disparity still exists between African-American and Caucasian (non-Hispanic) women. Combining all age groups, Caucasian women are more likely to develop breast cancer than African-American women, yet African-American women are more likely to die of breast cancer than are Caucasian women. (Fig. 11) Past studies show that nearly half (47 percent) of all African-American women diagnosed with invasive breast cancer die from the disease within 10 years.[11]

Regionally in Kentucky, there is a wide variance in breast cancer incidence rates among Area Development Districts. For 1997-98, Southeastern Kentucky regions had the lowest incidence rate for breast cancer with Cumberland Valley and Lake Cumberland having rates of 88.5 and 99.1 per 100,000 respectively. Likewise, Buffalo Trace in Northeastern Kentucky had a rate of 95.6. Regions with the highest rates include the Purchase region in far western Kentucky, with a rate of 136 per 100,000, and the KIPDA region, which includes Louisville, at a rate of 134. (Fig. 12)

COLON CANCER

The term "colon cancer" means any cancer in the colon (large intestine), from the beginning of the colon



SOURCE: Kentucky Cancer Registry, *1998 Kentucky Cancer Incidence Report*

(cecum) to the end of the colon (rectum). Colon cancer, colorectal cancer and rectal cancer are all the same disease. It is often perceived to be a disease that primarily affects men, but colon cancer affects women at rates equal to men.[12]

Risk Factors

As people age, their risk of developing cancers such as colon cancer increases. Most people who have colon cancer are over the age of 50. The average person has about a six percent chance of developing colon cancer. A personal or family history of colon or rectal polyps and a family history of colon or rectal cancer are also considered risk factors for colon cancer. About 5 percent of colon cancers are directly caused by inherited genetic abnormalities.[13]

Symptoms

Many people with colon cancer have no symptoms at all, until the cancer advances. This makes routine screening for colon cancer and knowing if you are at risk very important. Some symptoms of colon cancer include[14]:

- Rectal Bleeding
- Pain
- Unexpected Weight Loss
- Change in Bowel Habits

Colorectal cancer screening tests are used to detect cancer, polyps that may eventually become cancerous, or other abnormal conditions. Screening tests are important because they check for health problems before they cause symptoms, often at an early stage meaning treatment will be more successful.

Screenings

Screenings for colon cancer include a fecal occult blood test (FOBT**)** which is a test for hidden blood in the stool. This test has been proven to reduce the death rate of colorectal cancer. Other screening tests are sigmoidoscopy, which is an examination of the rectum and *lower* colon with a lighted instrument, and colonoscopy, which is an examination of the rectum and *entire* colon with a lighted instrument. Double contrast barium enemas, and digital rectal exams are also considered effective screening tests for colon cancer.[15]

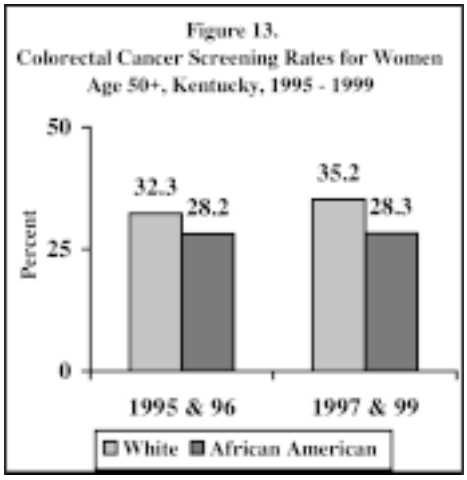
The U.S. Preventive Services Task Force and the American Cancer Society recommend the following screening procedures for all adults age 50 and older:

- An annual fecal occult blood test (FOBT)
- A flexible sigmoidoscopy every five years.
- Total colon examination by colonoscopy every 10 years or by double contrast barium enema every 5 to 10 years.

In Kentucky, screening rates for women over 50 have remained fairly constant with the exception of a rise in screening rates for white women from a 32.3 percent average for years 1995-96 to 35.2 percent for years 1997-99. (Fig. 13)

Incidence and Mortality

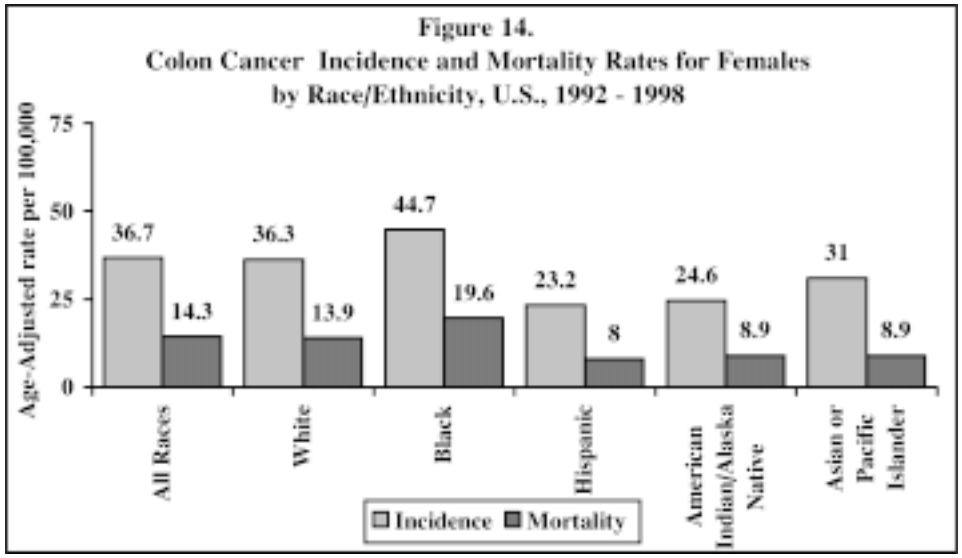
Colorectal cancer has the third highest incidence of any cancer site for U.S. men; ranks second to breast



SOURCE: Kentucky BRFSS, 1995 - 1999

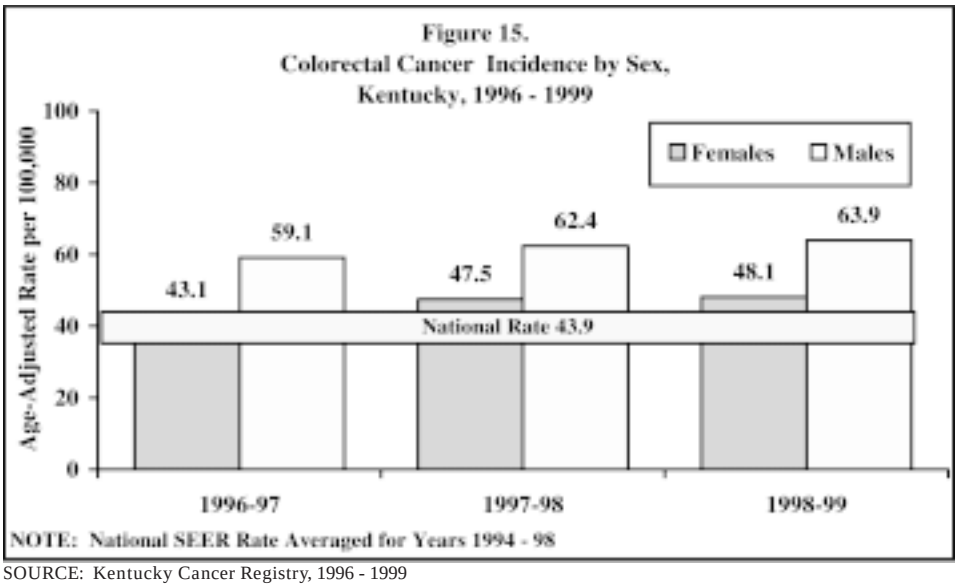
cancer for Hispanic, American Indian / Alaska Native, and Asian / Pacific Islander women; and ranks third for white and black women. Like incidence, deaths from colorectal cancer rank third after lung and prostate cancer for men and third after lung and breast cancer for women.[16] The American Cancer Society estimates that 56,700 Americans will die of colorectal cancer this year.

According to SEER, the age-adjusted rate for colon cancer among women nationally was 36.7 per 100,000 population (1992 - 1998 average). Data by racial and ethnic group indicate black women have the highest incidence at 44.7, while Hispanics have the lowest incidence with 23.2. (Fig. 14)



* Adjusted to the 1970 population
SOURCE: National Cancer Institute, SEER Program, 1992 - 1998

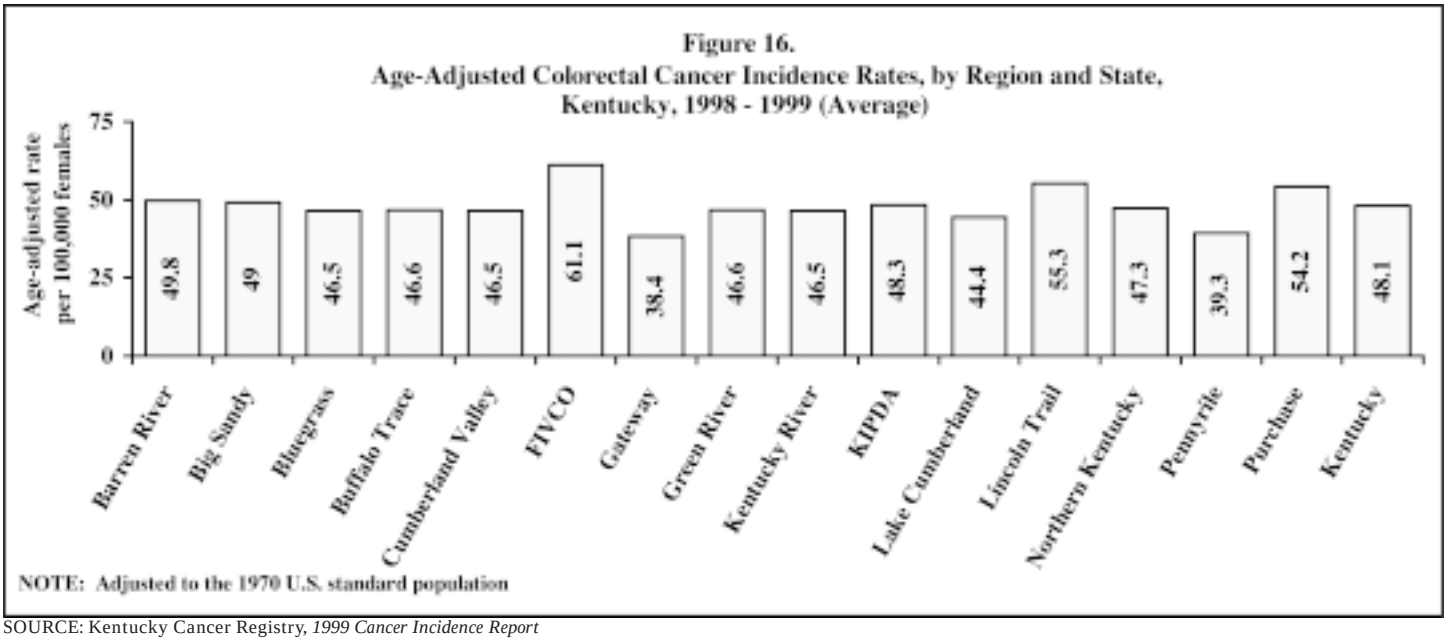
In Kentucky, the 1998-99 average, age-adjusted female incidence rate for colorectal cancer was 48.1 per 100,000 female population. The national average for females was 37.5 for combined years 1994 - 98. The national average for men and women combined was 43.9 for the same period. (Fig. 15)



SOURCE: Kentucky Cancer Registry, 1996 - 1999

Regionally in Kentucky, the FIVCO district has the highest rate of female colorectal cancer with a 2-year age-adjusted rate of 61.1 per 100,000 females. The district with the lowest rate was Gateway with 38.4 cases per 100,000 females. (Fig. 16)

As with incidence rates, racial and ethnic disparities exist among colorectal deaths nationally and in Kentucky. African-American women have the highest rate of death due to colon cancer, while Hispanics have the lowest. Death rates for white women with colon cancer



SOURCE: Kentucky Cancer Registry, *1999 Cancer Incidence Report*

are the second highest but have steadily declined since 1990. Conversely, mortality rates for black women have increased since 1994. (Fig. 17)

The colorectal mortality rate for females in Kentucky was 18.4 per 100,000 population in 1999, compared to 18.5 for women nationally in 2000.[17]

CERVICAL CANCER

Cervical cancer was the 11th leading cause of cancer death to women in Kentucky in 1999. Cervical cancer occurs in the cervix, where the uterus opens into the vagina. It can be detected with a Pap test, and is curable when detected early. As Pap tests are becoming more common, the death rate for cancer of the cervix is falling.[18]

Risk Factor

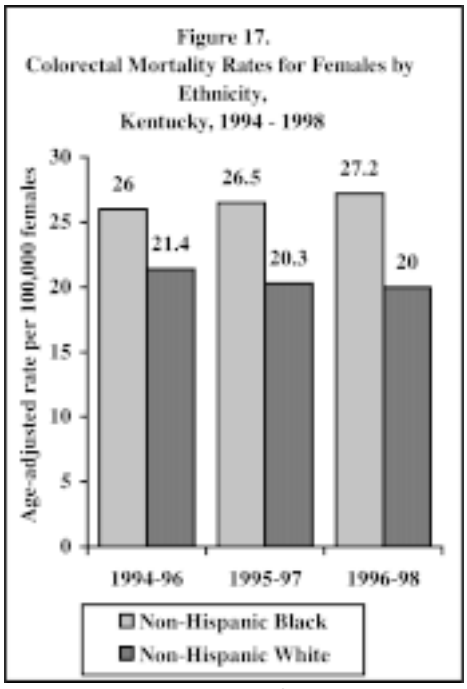
The major risk factors for cervical cancer include early age at initiation of sexual activity, multiple sexual partners, infection with Human Papilloma Virus 16 (HPV), and cigarette smoking.[19]

Screening

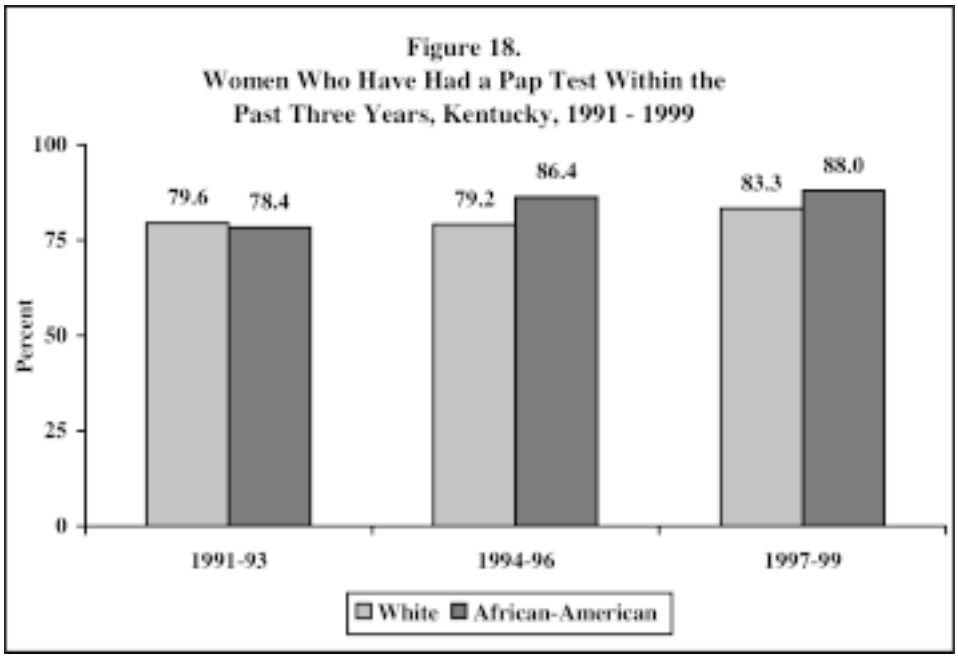
Overall, cervical cancer screening rates in Kentucky have risen slightly over the past decade with African-American women's screening rates jumping from 78.4 percent in 1991-93 to 88 percent in 1997-99. (Fig. 18)

Incidence & Mortality

Nationally, cervical cancer incidence rates have continued to decline with rates dropping



SOURCE: CDC, National Center for Health Statistics



SOURCE: Kentucky BRFSS, 1991 – 1999

from 13.1 per 100,000 female population in 1996 to 10.9 in 1999.

The age-adjusted cervical cancer incidence rate for 1997-98 in Kentucky overall was 10.4 per 100,000 female population.[20] According to the SEER program, the national incidence rate for cervical cancer was 7.7 in 1996. Though Kentucky's rate is above the SEER rate by less than 3 percent, cervical cancer rates in some regions of Kentucky are over twice as high as the SEER rate. The Big Sandy and Kentucky River Districts, both in far Eastern Kentucky, have two-year average rates of 16.1 and 13.4 respectively. (Fig. 19)

The ethnic patterns of this disease are quite different from those of any of the other female reproductive system cancers. The highest age-adjusted incidence rate in the national SEER areas occurs among Vietnamese women (43 per 100,000). Their rate is 7.4 times higher than the lowest incidence rate of 5.8 per 100,000 in Japanese women. Incidence rates of 15 per 100,000 or higher also occur among Alaska Native, Korean, and Hispanic women. [21]

Because cervical cancer is highly curable, mortality rates are about 50 percent to 80 percent lower than the incidence rates.[22] For years 1996-98, the average, age-adjusted mortality rate from cervical cancer was 3.2 per 100,000 female population nationally and 4.0 per 100,000 female population in Kentucky in 1999.[23]

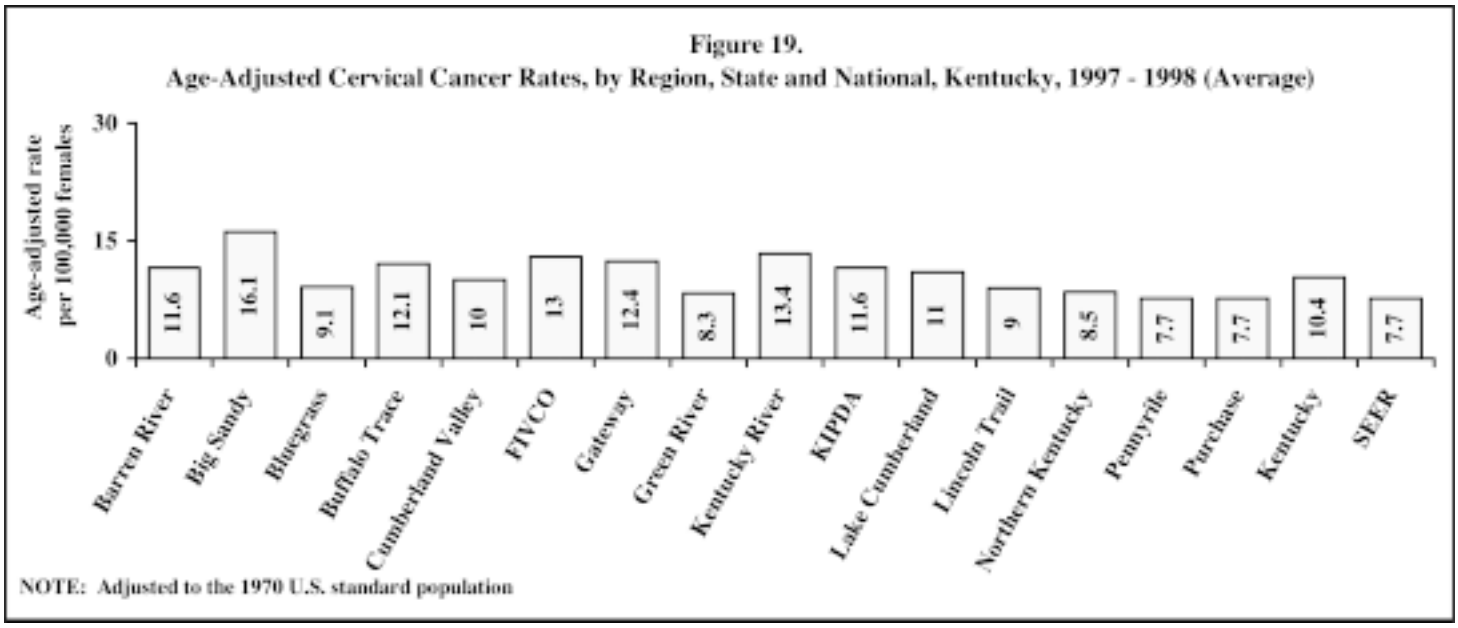
Mortality rates for cervical cancer vary however by ethnicity with non-Hispanic black women having higher rates of mortality than non-Hispanic white women. (Fig. 20)

OVARIAN CANCER

Ovarian cancer is the fourth leading cause of cancer death in women nationally and in Kentucky, preceded by lung, breast, and colon. It is the deadliest of all female reproductive cancers. It has long been called a silent killer because it occurs in an organ deep in the pelvis and produces only vague, easily dismissed symptoms, if any at all, before it reaches an advanced stage. (Fig. 21)

The most common form of cancer of the ovary is epithelial ovarian cancer, which grows in the lining — or epithelium — of the ovaries. This cancer is readily treated when caught early, but as mentioned above, it often does not show symptoms in its early stages.[24]

Ovarian cancer is further complicated by the fact that no simple early detection method



SOURCE: Kentucky Cancer Registry, *1998 Kentucky Cancer Incidence Report*

exists that could be used for screening.[25] However, the University of Kentucky's Gynecologic Cancer Screening program does provide free ovarian cancer screening to women with a family history or other risk factors. For more information on this program, call 1-800-766-8279.

Risk Factors

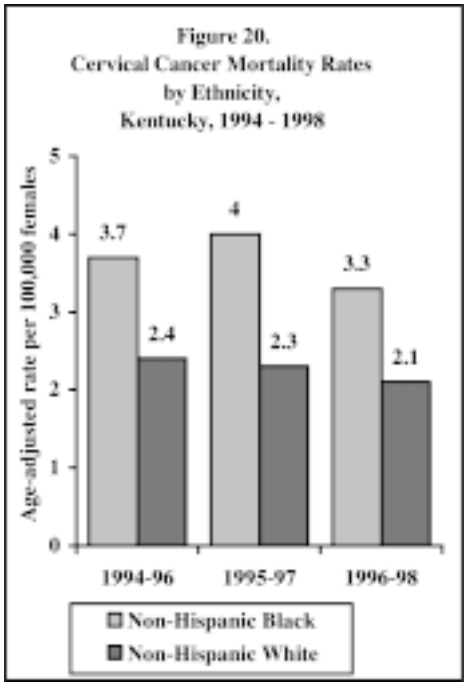
In the United States, the lifetime risk for developing ovarian cancer is approximately 1 out of 70, or 1.4 percent. Although reproductive, demographic, and lifestyle factors affect the risk of ovarian cancer, the single greatest ovarian cancer risk factor is a family history of the disease.[26] First-degree relatives (mother, daughter, sister) of a woman who has had ovarian cancer are at increased risk of developing this type of cancer themselves. The risk is somewhat less, but still above average, if other relatives (grandmother, aunt, or cousin) have had ovarian cancer. A family history of breast or colon cancer is also associated with an increased risk of developing ovarian cancer. [27]

Risk for ovarian cancer also increases as a woman gets older. Before age 30, the risk of developing ovarian cancer is remote, and even in hereditary cancer families, epithelial ovarian cancer is virtually nonexistent before age 20.[28]

Incidence & Mortality

Ovarian cancer incidence rises in a linear fashion between ages 30 and 50, and continues to increase, although at a slower rate, thereafter. The highest incidence is found in the eighth decade of life, with a rate of 57 cases per 100,000 women in the 75-79 year age group, compared to 16 cases per 100,000 women in the 40-44 year age group.[29]

In Kentucky, the 1997-98 average, age-adjusted incidence rate for ovarian cancer was 11.8 per 100,000 females. Rates were steady among most regions in Kentucky, however Barren River district had the lowest rate with 7.4 and Gateway had the highest at 15.1. (Fig. 22)

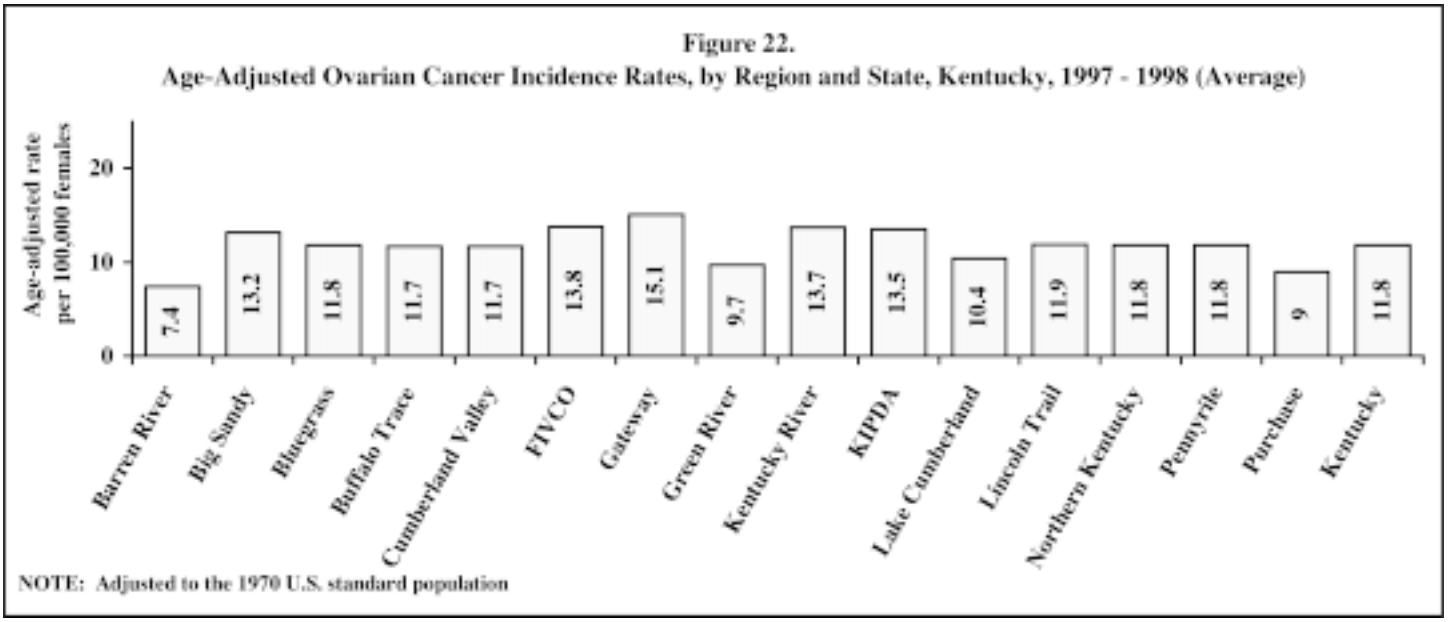


SOURCE: National Center for Health Statistics, Mortality Data, 1994 – 1998

Figure 21.
Ovarian Cancer Symptoms

- Abdominal swelling and pain
- Bloating
- Indigestion, gas, or nausea
- A feeling of fullness in the pelvis
- Unexplained weight loss or gain
- Abnormal vaginal bleeding (rare)
- Back pain
- Fatigue
- Constipation or diarrhea

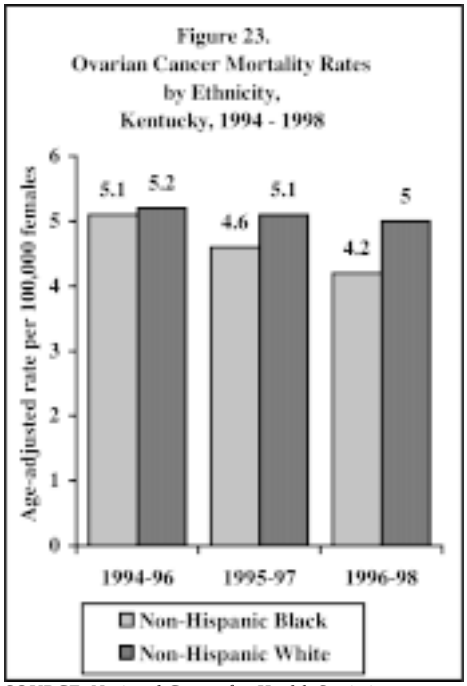
SOURCE: *The Deadly Whisper of Ovarian Cancer*, The New York Times on the Web, October 2, 2001.



SOURCE: Kentucky Cancer Registry, *1998 Kentucky Cancer Incidence Report*

Age-adjusted ovarian cancer mortality in Kentucky was 9.3 per 100,000 women in 1999, accounting for 212 deaths.

Ovarian cancer mortality rates are higher for non-Hispanic white women than for non-Hispanic black women. Mortality rates for both black and white women have declined since 1994. (Fig. 23)



SOURCE: National Center for Health Statistics, Mortality Data, 1994 – 1998

UTERINE CANCER

In the United States, cancer of the uterus accounts for six percent of all cancers in women in this country[30] and was the 9th leading cause of cancer death to women in Kentucky. Uterine cancer usually occurs after menopause, but it may also occur around the time that menopause begins. Abnormal vaginal bleeding is the most common symptom of uterine cancer.[31]

Risk Factors

Risk factors for uterine cancer include age, endometrial hyperplasia (increased number of cells in the lining of the uterus – often characterized by heaving menstrual bleeding and bleeding between periods) hormone replacement therapy without progesterone, and obesity. The body makes some of its estrogen in fatty tissue. That's why obese women are more likely than thin women to have higher levels of estrogen in their bodies. High levels of estrogen may be the reason that obese women have an increased

risk of developing uterine cancer. The risk of this disease is also higher in women with diabetes or high blood pressure (conditions that occur in many obese women) and higher among women who have no children, begin menstruation at a very young age or enter menopause late in life. [32]

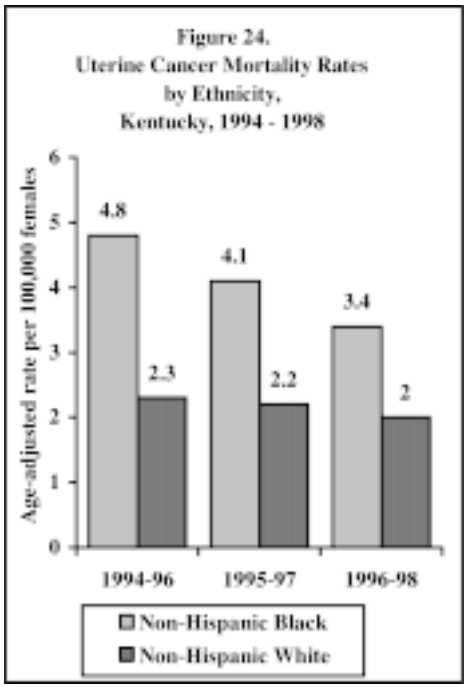
Incidence & Mortality

For 2001, an estimated 38,300 cases of uterine cancer were expected to be diagnosed among women nationally. The national incidence rate for unternine cancer was 21.4 per 100,000 women for combined years 1994 - 98. Incidence rates are higher among white women than black women, at 22.6 compared to 15.3, respectively for the same period.[33] However, the relationship for mortality is reversed with uterine cancer mortality rates among black women nearly twice as high as those among white women. (Fig. 24)

Uterine cancer incidence among women in Kentucky was 20 cases per 100,000 females in 1999. The age-adjusted rate of death due to uterine cancer was 3.9 per 100,000 females in Kentucky for 1999.

SKIN CANCER

Skin cancer is the most common form of cancer in the United States. The three major types of skin cancer are the highly curable basal cell and squamous cell carcinomas and the more serious malignant melanoma. The American Cancer Society estimates that about 1.3 million cases of nonmelanoma skin cancer are diagnosed in the U.S. each year, although this number is not accurately known because physicians are not required to report non-melanoma skin cancer to cancer registries.[34]



SOURCE: National Center for Health Statistics, Mortality Data, 1994 – 1998

Risk Factors

The primary risk factor for skin cancer is ultraviolet (UV) sun exposure. Consistently avoiding overexposure to UV rays is the best preventative measure to protect against skin cancer. Despite this, approximately 70 percent of adults do not protect themselves from the sun's rays.[35]

Caucasians are at far greater risk for skin cancer than those of other races. Nationally, the incidence of malignant melanoma doubled for whites between 1973 and 1995.[36] Although anyone can get skin cancer, people with certain characteristics are at particularly high risk. (Fig. 25)

Incidence & Mortality

It is estimated that about 51,400 of the more deadly

Figure 25.
Skin Cancer Risk Factors

- Fair to light skin
- Family or personal history of skin cancer
- Chronic exposure to sun
- History of sunburns early in life
- Atypical or large number of moles
- Freckles (an indicator of sun sensitivity and sun damage)

SOURCE: CDC, Cancer Prevention and Control, "Skin Cancer: Preventing America's Most Common Cancer", (http://www.cdc.gov/cancer/nscpep/skin.htm)

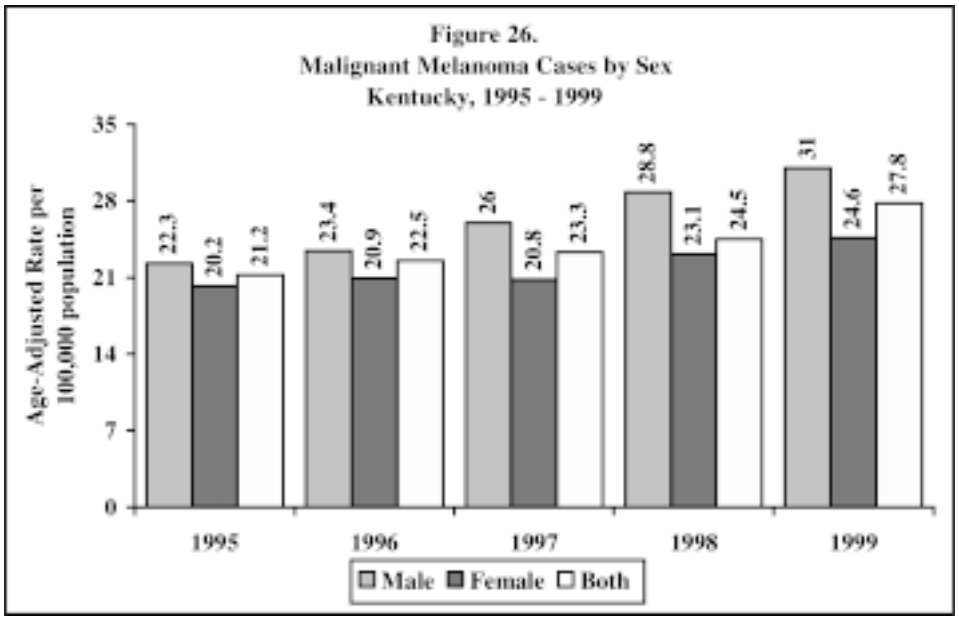
malignant melanomas will be diagnosed in the U.S. during 2001, claiming the lives of almost 9,800 people.[37] Nationally, malignant melanoma is the sixth most common cancer in men and the seventh most common cancer in women and is the most rapidly increasing form of cancer in the U.S.[38] Malignant melanoma accounts for about 4 percent of skin cancer cases, yet causes nearly 79 percent of all skin cancer deaths.[39]

In 1999 malignant melanoma was the fourth most frequently reported cancer among women in Kentucky, following breast, lung and colon.[40]

Melanoma incidence rates among females in Kentucky rose from 20.2 cases per population in 1995 to 24.6 in 1999. Male rates in Kentucky jumped from 22.3 cases per 100,000 population in 1995 to 31 in 1999. (Fig. 26)

Deaths from melanoma are more common among men than women. In 1999, melanoma was responsible for 112 deaths in Kentucky.[41] Of these deaths, 40 were female and 72 were male. In 1999, the age-adjusted rate of death for females was 1.8 per 1,000 female population.[42]

Figure 26.
Malignant Melanoma Cases by Sex
Kentucky, 1995 - 1999



SOURCE: Kentucky Cancer Registry

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